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EXAMINER

WASSUM, LUKE S

ART UNIT PAPER NUMBER

2177

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16

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/404,597

Applicant(s)

RAUSER ET AL.

Examiner

Luke S. Wassum

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 01 December 2003.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-12 and 16-37 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-12 and 16-37 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 01 December 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. §§ 119 and 120

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 13) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.
- a) ☐ The translation of the foreign language provisional application has been received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 1 December 2003 has been entered.

Response to Preliminary Amendment

2. The Applicants' preliminary amendment, filed 1 December 2003, has been received, entered into the record, and considered.
3. As a result of the amendment, claim 16 has been amended, claims 13-15 have been canceled, and new claims 29-37 have been added. Claims 1-12 and 16-37 are now pending in the application.

The Invention

4. The invention is drawn towards a method of providing recommendations to a user, whereby in addition to information indicative of the user's interests, additional filtering criteria is applied in order to prevent the recommendation of items that, while strictly meeting the interest criteria of the user, are not appropriate for recommendation. Examples of reasons for such items being inappropriate are, for instance, items that are out of stock or otherwise currently unavailable; items which are out of season; or items which the age or other characteristics of the user renders inappropriate.

Power to Inspect/Copy

5. The examiner acknowledges the receipt of the Applicants' Power to Inspect/Copy, filed 17 November 2003.

Drawings

6. The Applicants' new formal drawings, comprising new Figures 5 and 6A have been received and entered into the record. In view of these new drawings, the examiner withdraws the pending objections to the drawings.

Claim Objections

7. In view of the amendment to claim 16, the examiner has withdrawn the pending claim objection.
8. Claim 35 is objected to because of the following informalities:
- The claim contains a period after the second limitation instead of a semi-colon.
- Appropriate correction is required.

Claim Rejections - 35 USC § 112

9. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

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10. Claims 32, 36 and 37 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

11. Claims 32 and 36 cite the features 'generation interface' and 'rejection interface', terms which are neither disclosed nor described in the specification in sufficient detail as to render the claim enabled.

12. Claim 37, incorporating the deficiency of its parent claim 36 is also rejected.

Claim Rejections - 35 USC § 102

13. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

14. Claims 1, 3-12, 29, 30, 34 and 35 are rejected under 35 U.S.C. 102(e) as being anticipated by **Breese et al.** (U.S. Patent 6,006,218).

15. Regarding claim 1, **Breese et al.** teaches a method for providing a recommendation list from a plurality of items, comprising the steps of:

- a) specifying an adaptable constraint filter, using constraint forming rules, to select ones of the items satisfying a constraint (see col. 8, lines 6-21);
- b) selecting the ones of the plurality of items that satisfy the constraint filter (see col. 8, lines 64-66);
- c) computing predicted values based on a recommendation filter for the selected ones of the items (see col. 9, lines 5-42); and
- d) appending the selected ones of the items meeting predetermined criteria to the recommendation list (see col. 9, lines 5-42).

16. Regarding claim 29, **Breese et al.** teaches a method of generating a recommendation from a plurality of items having assigned category memberships representing attributes of the items (see disclosure that column 636 includes information on the content of a television show, such as categories 'situation comedy', 'detective/attorney drama', 'physical comedy', etc., col. 6, lines 11-19), comprising:

- a) receiving a recommendation request (see col. 8, lines 6-21), the recommendation request including a value for a free value (see disclosure that input relating to the search to be performed is obtained via the user input device, thus constituting the claimed free variable, col. 8, lines 16-20);
- b) applying a series of filters to each of the items, the series comprising a constraint filter based on a constraint comprising the free variable and a recommendation filter for furnishing a predicted rating value (see disclosure that the search engine may be any one of a plurality of known database or information retrieval engines, col. 4, lines 36-40, said known database or information retrieval engines inherently capable of

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applying a series of filter criteria; see also disclosure that retrieved results include a rating value, col. 7, lines 24-30); and

- c) generating a recommendation based on the predicted rating value or values for the item or items that pass the constraint filter and the recommendation filter (see col. 9, lines 5-42).

17. Regarding claim 35, **Breese et al.** teaches a method of generating a recommendation from a plurality of items having assigned category memberships representing attributes of the items (see disclosure that column 636 includes information on the content of a television show, such as categories 'situation comedy', 'detective/attorney drama', 'physical comedy', etc., col. 6, lines 11-19), comprising:

- a) building a constraint using constraint forming rules (see disclosure that the search engine may be any one of a plurality of known database or information retrieval engines, col. 4, lines 36-40, said known database or information retrieval engines inherently capable of enforcing constraint forming rules);
- b) incorporating the constraint into a constraint filter (see disclosure that the search engine may be any one of a plurality of known database or information retrieval engines, col. 4, lines 36-40, said known database or information retrieval engines inherently capable of incorporating multiple constraints into a filter);
- c) applying a series of filters to each of the items, the series comprising a constraint filter based on a constraint comprising the free variable and a recommendation filter for furnishing a predicted rating value (see disclosure that the search engine may be any one of a plurality of known database or information retrieval engines, col. 4, lines 36-

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40, said known database or information retrieval engines inherently capable of applying a series of filter criteria; see also disclosure that retrieved results include a rating value, col. 7, lines 24-30); and

d) generating a recommendation based on the predicted rating value or values for the item or items that pass the constraint filter and the recommendation filter (see col. 9, lines 5-42).

18. Regarding claim 3, **Breese et al.** additionally teaches a method for providing a recommendation list wherein a predetermined number of items are appended to the list (see col. 2, lines 46-52).

19. Regarding claim 4, **Breese et al.** additionally teaches a method for providing a recommendation list wherein selecting the ones of the items that satisfy the constraint filter further includes applying a constraint filter containing free variables to the ones of the items (see disclosure that input relating to the search to be performed is obtained via the user input device, thus constituting the claimed free variable, col. 8, lines 16-20).

20. Regarding claim 5, **Breese et al.** additionally teaches a method for providing a recommendation list wherein selecting the ones of the items that satisfy the constraint filter further includes applying a constraint containing bound expressions (see disclosure that the search engine may be any one of a plurality of known database or information retrieval engines, col. 4, lines 36-40, said known database or information retrieval engines inherently capable of applying filter criteria containing bound expressions).

21. Regarding claim 6, **Breese et al.** additionally teaches a method for providing a recommendation list wherein selecting the ones of the items that satisfy the constraint filter further includes applying a boolean constraint filter (see disclosure that the search engine may be any one of a plurality of known database or information retrieval engines, col. 4, lines 36-40, said known database or information retrieval engines inherently capable of applying filter criteria containing boolean expressions).

22. Regarding claim 7, **Breese et al.** additionally teaches a method for providing a recommendation list wherein selecting the ones of the items that satisfy the constraint filter further includes applying a constraint filter that signifies equality (see disclosure that the search engine may be any one of a plurality of known database or information retrieval engines, col. 4, lines 36-40, said known database or information retrieval engines inherently capable of applying filter criteria containing an equality).

23. Regarding claim 8, **Breese et al.** additionally teaches a method for providing a recommendation list wherein selecting the ones of the items that satisfy the constraint filter further includes applying a constraint filter to the ones of the items, wherein the constraint signifies category membership (see disclosure that column 636 includes information on the content of a television show, such as categories 'situation comedy', 'detective/attorney drama', 'physical comedy', etc., col. 6, lines 11-19, categories which can inherently be used as filter criteria by the known database or information retrieval engines taught at col. 4, lines 36-40).

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24. Regarding claim 9, **Breese et al.** additionally teaches a method for providing a recommendation list wherein computing predicted value further includes evaluating the selected ones of the items with collaborative filtering (see disclosure that the search engine can be implemented as a collaborative filter, col. 4, lines 36-40).

25. Regarding claim 10, **Breese et al.** additionally teaches a method for providing a recommendation list wherein a predetermined number of items are appended to the list, after which the list is truncated (see col. 2, lines 46-52).

26. Regarding claim 11, **Breese et al.** additionally teaches a method for providing a recommendation list wherein selecting the ones of the items that satisfy the constraint filter further comprising the steps of:

- a) obtaining data from a user (see disclosure that input relating to the search to be performed is obtained via the user input device, col. 8, lines 6-21); and
- b) adding the data to the constraint filter (see col. 8, lines 6-21 and 64-66).

27. Regarding claim 12, **Breese et al.** additionally teaches a method for providing a recommendation list wherein specifying the constraint filter further includes:

- a) obtaining the constraint from an operator (see disclosure that input relating to the search to be performed is obtained via the user input device, col. 8, lines 6-21); and
- b) storing the constraint filter in memory (see disclosure that once the input required to conduct the search is obtained, operation progresses to the next step, col. 8, lines 25-27, inherently necessitating the claimed storage of the constraint filter in memory).

28. Regarding claim 30, Breese et al. additionally teaches a method of generating a recommendation further comprising building the constraint using constraint forming rules and incorporating the constraint into the filter (see disclosure that the search engine may be any one of a plurality of known database or information retrieval engines, col. 4, lines 36-40, said known database or information retrieval engines inherently capable of enforcing constraint forming rules and incorporating multiple constraints into a filter).

29. Regarding claim 34, Breese et al. additionally teaches a method of generating a recommendation wherein the recommendation generating step comprises generating a list of recommendations based on a specified number of the items that pass the constraint filter and the recommendation filter with the highest predicted rating values (see disclosure that retrieved results include a rating value, col. 7, lines 24-30; see also col. 2, lines 46-52).

Claim Rejections - 35 USC § 103

30. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

31. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

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1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

32. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

33. Claims 2 and 33 are rejected under 35 U.S.C. 103(a) as being unpatentable over **Breese et al.** (U.S. Patent 6,006,218) as applied to claims 1, 3-12, 29, 30, 34 and 35 above, and further in view of **Herz** (U.S. Patent 6,460,036).

34. Regarding claims 2 and 33, **Breese et al.** teaches a method for providing a recommendation list from a plurality of items substantially as claimed.

Breese et al. does not explicitly teach a method for providing a recommendation list wherein items are appended to the recommendation list when the predicted value exceeds a predetermined number.

Herz, however, explicitly teach a method for providing a recommendation list wherein items are appended to the recommendation list when the predicted value exceeds a predetermined number (see step 13B-03 in Figure 13B; see also col. 25, lines 17-65; see also col. 57, line 6 through col. 58, line 23).

It would have been obvious to one of ordinary skill in the art at the time of the invention to append items to the recommendation list when the predicted value exceeds a predetermined number, since this would allow a user to access information of relevance and interest without expending an excessive amount of time and energy searching for the information (see col. 1, lines 45-50), and also because it would efficiently provide only desired information to the user and conserve valuable storage space by only storing those target objects which are relevant to the user's interests (see col. 8, lines 6-9).

35. Claims 31 and 32 are rejected under 35 U.S.C. 103(a) as being unpatentable over **Breese et al.** (U.S. Patent 6,006,218) as applied to claims 1, 3-12, 29, 30, 34 and 35 above, and further in view of **Valentin et al.** (Canadian Patent 2,249,096).

36. Regarding claim 31, **Breese et al.** teaches a method of generating a recommendation list substantially as claimed.

Breese et al. does not explicitly teach a method of generating a recommendation list comprising the step of determining an order of the filters to apply to the plurality of items based on

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the cost of the filters, wherein the constraint filter is applied first when the cost is lower, and applying the recommendation filter first when the cost is lower.

Valentin et al., however, teaches a method of generating a recommendation list comprising the step of determining an order of the filters to apply to the plurality of items based on the cost of the filters, wherein the constraint filter is applied first when the cost is lower, and applying the recommendation filter first when the cost is lower (see extensive discussion of the selection of the optimum query execution plan, page 2, line 13 through page 4, line 16, and particularly the recitation that different retrieval operations can be performed in different orders, page 3, lines 10-11 and page 4, lines 6-9).

It would have been obvious to one of ordinary skill in the art at the time of the invention to choose an access plan to optimize the query execution, since it is important to select a method for finding the data requested in a query which minimizes the computer and disk access time, and therefore optimizes the cost of performing the query (see page 2, lines 3-12).

37. Regarding claim 32, **Breese et al.** teaches a method of generating a recommendation list substantially as claimed, including providing constraint and recommendation filters with generation and rejection interfaces (see col. 8, lines 6-21 and 64-66; see also col. 9, lines 5-42).

Breese et al. does not explicitly teach a method of generating a recommendation list comprising the steps of determining a cost for a first and second orders of applying the constraint and recommendation filters, and establishing one order as the lowest cost order.

Valentin et al., however, teaches a method of generating a recommendation list comprising the steps of determining a cost for a first and second orders of applying the constraint and recommendation filters, and establishing one order as the lowest cost order (see the steps involved in determining the optimum query execution plan, including the steps of iteratively determining the costs of each alternative plan and selecting the plan with the lowest cost, page 6, line 18 through page 8, line 17).

It would have been obvious to one of ordinary skill in the art at the time of the invention to choose an access plan to optimize the query execution, since it is important to select a method for finding the data requested in a query which minimizes the computer and disk access time, and therefore optimizes the cost of performing the query (see page 2, lines 3-12).

38. Claims 16-28, 36 and 37 are rejected under 35 U.S.C. 103(a) as being unpatentable over **Breese et al.** (U.S. Patent 6,006,218) in view of **Valentin et al.** (Canadian Patent 2,249,096).

39. Regarding claim 16, **Breese et al.** teaches an apparatus designed to provide a recommendation list from a plurality of items in a data processing system substantially as claimed, comprising:

- a) a processing component configured to process instructions for selecting items from the plurality of items by:
 - i) applying a constraint filter to the ones of the items (see col. 8, lines 6-21 and 64-66);

ii) applying a recommendation filter to the ones of the items (see col. 9, lines 5-42);

and

b) a recommender component configured to append selected items to a recommendation list based on the constraint filter and a recommendation filter (see col. 9, lines 5-42).

Breese et al. does not explicitly teach an apparatus for providing a recommendation list comprising the step of determining an order for the constraint filter applying step and the recommendation filter applying step based on the cost of the filters.

Valentin et al., however, teaches an apparatus for providing a recommendation list comprising the step of determining an order for the constraint filter applying step and the recommendation filter applying step based on the cost of the filters (see extensive discussion of the selection of the optimum query execution plan, page 2, line 13 through page 4, line 16, and particularly the recitation that different retrieval operations can be performed in different orders, page 3, lines 10-11 and page 4, lines 6-9).

It would have been obvious to one of ordinary skill in the art at the time of the invention to choose an access plan to optimize the query execution, since it is important to select a method for finding the data requested in a query which minimizes the computer and disk access time, and therefore optimizes the cost of performing the query (see page 2, lines 3-12).

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40. Regarding claim 17, **Breese et al.** additionally teaches an apparatus wherein the processing component computes predicted values based on the recommendation filter (see disclosure that retrieved results include a rating value, col. 7, lines 24-30; see also col. 2, lines 46-52).

41. Regarding claim 18, **Breese et al.** teaches an apparatus for providing a recommendation list substantially as claimed.

Breese et al. does not explicitly teach an apparatus for providing a recommendation list comprising the step of determining an order of the filters to apply to the plurality of items based on the cost of the filters, wherein the constraint filter is applied first when the cost is lower, and applying the recommendation filter first when the cost is lower.

Valentin et al., however, teaches an apparatus for providing a recommendation list comprising the step of determining an order of the filters to apply to the plurality of items based on the cost of the filters, wherein the constraint filter is applied first when the cost is lower, and applying the recommendation filter first when the cost is lower (see extensive discussion of the selection of the optimum query execution plan, page 2, line 13 through page 4, line 16, and particularly the recitation that different retrieval operations can be performed in different orders, page 3, lines 10-11 and page 4, lines 6-9).

It would have been obvious to one of ordinary skill in the art at the time of the invention to choose an access plan to optimize the query execution, since it is important to select a method for

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finding the data requested in a query which minimizes the computer and disk access time, and therefore optimizes the cost of performing the query (see page 2, lines 3-12).

42. Regarding claim 19, **Breese et al.** additionally teaches an apparatus for providing a recommendation list wherein the processing component applies a constraint filter containing free variables to the ones of the items (see disclosure that input relating to the search to be performed is obtained via the user input device, thus constituting the claimed free variable, col. 8, lines 16-20).

43. Regarding claim 20, **Breese et al.** additionally teaches an apparatus for providing a recommendation list wherein the processing component applies a constraint containing bound expressions (see disclosure that the search engine may be any one of a plurality of known database or information retrieval engines, col. 4, lines 36-40, said known database or information retrieval engines inherently capable of applying filter criteria containing bound expressions).

44. Regarding claim 21, **Breese et al.** additionally teaches an apparatus for providing a recommendation list wherein the processing component applies a boolean constraint filter (see disclosure that the search engine may be any one of a plurality of known database or information retrieval engines, col. 4, lines 36-40, said known database or information retrieval engines inherently capable of applying filter criteria containing boolean expressions).

45. Regarding claim 22, **Breese et al.** additionally teaches an apparatus for providing a recommendation list wherein the processing component applies a constraint filter to the ones of the items, wherein the constraint signifies category membership (see disclosure that column 636 includes

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information on the content of a television show, such as categories 'situation comedy', 'detective/attorney drama', 'physical comedy', etc., col. 6, lines 11-19, categories which can inherently be used as filter criteria by the known database or information retrieval engines taught at col. 4, lines 36-40).

46. Regarding claim 23, **Breese et al.** additionally teaches an apparatus for providing a recommendation list wherein the processing component applies a constraint filter that signifies equality (see disclosure that the search engine may be any one of a plurality of known database or information retrieval engines, col. 4, lines 36-40, said known database or information retrieval engines inherently capable of applying filter criteria containing an equality).

47. Regarding claim 24, **Breese et al.** additionally teaches an apparatus for providing a recommendation list wherein the processing component computes predicted values by evaluating each of the items with collaborative filtering (see disclosure that the search engine can be implemented as a collaborative filter, col. 4, lines 36-40).

48. Regarding claim 25, **Breese et al.** additionally teaches an apparatus for providing a recommendation list wherein the recommender component is further configured to truncate the recommendation list when a predetermined number of the ones of the items on the recommendation list has been met (see col. 2, lines 46-52).

49. Regarding claim 26, **Breese et al.** additionally teaches an apparatus for providing a recommendation list further comprising an input component configured to:

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- a) obtain the constraint from an operator (see disclosure that input relating to the search to be performed is obtained via the user input device, col. 8, lines 6-21); and
- b) store the constraint filter in memory (see disclosure that once the input required to conduct the search is obtained, operation progresses to the next step, col. 8, lines 25-27, inherently necessitating the claimed storage of the constraint filter in memory).

50. Regarding claim 27, **Breese et al.** additionally teaches an apparatus for providing a recommendation list further comprising an input component configured to:

- a) obtain data from a user (see disclosure that input relating to the search to be performed is obtained via the user input device, col. 8, lines 6-21); and
- b) add the data to the constraint filter (see col. 8, lines 6-21 and 64-66).

51. Regarding claim 28, **Breese et al.** additionally teaches an apparatus for providing a recommendation list wherein the processing component is further configured to adaptively specify the constraint filter using a set of constraint-forming rules (see disclosure that the search engine may be any one of a plurality of known database or information retrieval engines, col. 4, lines 36-40, said known database or information retrieval engines inherently capable of enforcing constraint forming rules; see also col. 8, lines 6-21).

52. Regarding claim 36, **Breese et al.** teaches a method of generating a recommendation list from a plurality of items having assigned category memberships representing attributes of the items (see disclosure that column 636 includes information on the content of a television show, such as

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categories 'situation comedy', 'detective/attorney drama', 'physical comedy', etc., col. 6, lines 11-19), comprising:

- a) building a constraint using constraint forming rules (see disclosure that the search engine may be any one of a plurality of known database or information retrieval engines, col. 4, lines 36-40, said known database or information retrieval engines inherently capable of enforcing constraint forming rules);
- b) incorporating the constraint into a constraint filter having a generation interface and a rejection interface (see disclosure that the search engine may be any one of a plurality of known database or information retrieval engines, col. 4, lines 36-40, said known database or information retrieval engines inherently capable of incorporating multiple constraints into a filter);
- c) providing a recommendation filter for furnishing a predicted rating value, the recommendation filter having a generation interface and a rejection interface (see col. 9, lines 5-42; see also disclosure that retrieved results include a rating value, col. 7, lines 24-30; see also col. 2, lines 46-52);
- d) receiving a recommendation request (see col. 8, lines 6-21);
- e) applying a series of filters to each of the items, the series comprising a constraint filter based on a constraint comprising the free variable and a recommendation filter for furnishing a predicted rating value (see disclosure that the search engine may be any one of a plurality of known database or information retrieval engines, col. 4, lines 36-40, said known database or information retrieval engines inherently capable of applying a series of filter criteria; see also disclosure that retrieved results include a rating value, col. 7, lines 24-30); and

- f) generating a recommendation based on the predicted rating value or values for the item or items that pass the constraint filter and the recommendation filter (see col. 9, lines 5-42).

Breese et al. does not explicitly teach a method of generating a recommendation list comprising the steps of determining a cost for a first and second orders of applying the constraint and recommendation filters, and establishing one order as the lowest cost order.

Valentin et al., however, teaches a method of generating a recommendation list comprising the steps of determining a cost for a first and second orders of applying the constraint and recommendation filters, and establishing one order as the lowest cost order (see the steps involved in determining the optimum query execution plan, including the steps of iteratively determining the costs of each alternative plan and selecting the plan with the lowest cost, page 6, line 18 through page 8, line 17).

It would have been obvious to one of ordinary skill in the art at the time of the invention to choose an access plan to optimize the query execution, since it is important to select a method for finding the data requested in a query which minimizes the computer and disk access time, and therefore optimizes the cost of performing the query (see page 2, lines 3-12).

53. Regarding claim 37, **Breese et al.** additionally teaches a method for providing a recommendation list wherein the building step comprises incorporating a free variable into the constraint (see disclosure that input relating to the search to be performed is obtained via the user

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input device, thus constituting the claimed free variable, col. 8, lines 16-20), and wherein the recommendation request receiving step comprises receiving a value for the free variable (see disclosure that input relating to the search to be performed is obtained via the user input device, thus constituting the claimed receiving a value for the free variable, col. 8, lines 16-20).

Response to Arguments

54. Applicant's arguments filed 1 December 2003 have been fully considered but they are not persuasive.

55. Regarding the Applicants' arguments that the 'adaptable' and 'constraint-forming rules' limitations are not taught by the prior art of record, the examiner respectfully disagrees.

It is noted that the features upon which applicant relies are not recited in the rejected claim(s). Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993).

In particular, the term 'adaptable' is sufficiently broad as to be anticipated by any interactive system that accepts queries from a user, in that it adapts to the specific desired query criteria of each user.

Furthermore, the use of 'constraint-forming rules' is also interpreted broadly by the examiner. In the specification on page 6, lines 14-18, the Applicants disclose that the constraint-forming rules are input by the user, and may be (for example) "candidate isa red-thing" or "candidate isa comedy and not candidate isa r-rated". Given this disclosure, any interactive system

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that accepts queries from a user would qualify as anticipating the claimed use of 'constraint-forming rules'.

56. However, regarding the interpretation of the "predetermined criteria" as disclosed by the **Hey** reference, the examiner finds the arguments persuasive, and present new grounds for rejection in this Office action.

57. Regarding the Applicants' arguments that the **Jarke et al.** reference is inapplicable because it applies to databases, the examiner respectfully disagrees.

The prior art of record teaches methods for optimizing the methods of querying databases, such that the cost for executing the queries (in terms of CPU time and I/O time) is minimized. In executing database queries, one of the determinations to be made in such optimization is the order in which different filters are to be applied.

This teaching is completely analogous to the claimed order determination, wherein the cost of execution is minimized. In both cases, the goal is to apply different filtering criteria in a specific order such that a desired set of data items are retrieved with a minimum of execution time, exemplified by CPU time and I/O time.

58. In the current Office action, however, the examiner has located new prior art that more explicitly teaches the optimization of query plans, and as such, new grounds for rejection are presented.

Conclusion

59. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Lang et al. (U.S. Patent 6,314,420) teaches a search engine system for a portal site on the Internet, employing a collaborative/content-based filter.

Lang et al. (U.S. Patent Application Publication 2002/0120609) teaches a search engine system for a portal site on the Internet, employing a collaborative/content-based filter.

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Any inquiry concerning this communication or earlier communications from the examiner should be directed to Luke S. Wassum whose telephone number is 703-305-5706. The examiner can normally be reached on Monday-Friday 8:30-5:30, alternate Fridays off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John E. Breene can be reached on 703-305-9790. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

In addition, INFORMAL or DRAFT communications may be faxed directly to the examiner at 703-746-5658.

Customer Service for Tech Center 2100 can be reached during regular business hours at (703) 306-5631, or fax (703) 746-7240.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-305-3900.



Luke S. Wassum
Art Unit 2177

lsw
31 December 2003